

“Publish or Perish”; time to question an age old adage?

Dear Sir,

In June 2020, as two of the world's leading medical journals, the *Lancet* and the *New England Journal of Medicine (NEJM)* published retractions of drug studies for Coronavirus disease 2019 (COVID-19), it is perhaps an apt time to question the wisdom of the “publish or perish” philosophy. The compelling requirement to publish, especially in academic circles may lead researchers to unethical conduct ranging from plagiarism to fraud.

The original *Lancet* study reported increased frequency of ventricular arrhythmias and increased risk of dying in hospital in COVID-19 patients treated with hydroxychloroquine (HCQ). The study was met with widespread global skepticism of the veracity of the data. By the time *Lancet* published a retraction^[1] by three of the four authors, some damage was already done. Following publication of the original study, several trials including the World Health Organization (WHO) coordinated Solidarity Trial temporarily suspended recruitment of patients into the HCQ arm.^[2] The Solidarity Trial involves over 400 hospitals in 35 countries and compares multiple treatment regimens for COVID-19. The impact of suspending international clinical trials of any potentially efficacious and safe treatment arm is enormous and more so in the midst of a global pandemic.

The original *Lancet* study used data from an analytics firm that employed deep machine learning to assess deidentified electronic medical records from numerous client hospitals across the globe. The study “Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis”^[1] was published online on May 22 this year. In an open letter^[3] to the study's authors, a varied group of about 200 doctors, statisticians, and medical scientists expressed serious reservations regarding the veracity of the research. Concerns included inadequate adjustment of confounders and lack of data sharing. In the wake of several questions, the analytics company remains reluctant to release the primary data for independent audit. This is despite *Lancet* being a signatory to the Wellcome statement on data sharing for COVID-19 studies.^[4] The end result was an expression of concern^[5] in print by the *Lancet* editors and an unfortunate retraction of the study.^[1] The scientific vigor of the researchers who red flagged their reservations to the editor of the *Lancet* is to be lauded. Irrespective of the eventual results of the Solidarity Trial, the ramification of withholding one potential treatment arm would have been regrettable.

A second paper titled “Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19” published in *NEJM* was also retracted^[6] by coauthors of the *Lancet* study for

similar reasons. Employing the same data analytics firm, the *NEJM* paper reported effects of ongoing treatment with angiotensin-converting enzyme (ACE) inhibitors and angiotensin-receptor blockers (ARBs) on COVID-19. It presented reassurances that the antihypertensive medications were not associated with an increased risk of mortality in hospitalized COVID-19 patients.

A decade ago, in 2010, another notable retraction from *Lancet* was a study by a British researcher that purportedly linked autism to the measles, mumps, and rubella (MMR) vaccine.^[7] Again, the damage from the widely discredited research was enormous. In the interim 12 years between publication and retraction of the study, MMR vaccination rates in the United Kingdom collapsed^[8] leading to measles outbreaks.

Retraction in radiology journals has increased in the last decade^[9] reflecting the overall trend in medical literature. A study^[8] of retracted publications within radiology journals included reasons varying from “incorrect methods or results (33.3% of cases), complete or partial duplication (33.3%), plagiarism (14.6%), permission issue (8.3%), publisher’s error (6.3%), and no identified reason (6.3%).” Radiology studies in the future will increasingly employ big data and artificial intelligence (similar to data analytics employed in the retracted *Lancet* study). Radiology researchers and radiology journal editors of the future will therefore face novel challenges in data verification.

The recent events are an opportunity to introspect on the medical publication culture during the pandemic and beyond. In a genuine attempt to speedily publish papers that impact COVID-19 treatment, is there perhaps a sacrifice of accuracy and compromise of ethics? The urgency to publish studies on COVID-19 without recourse to rigorous peer review must be tempered. Questions can also be raised regarding the general inadequacies of the peer review process in medicine. Peer review for journals is most often an unpaid service; the fall out is lack of accountability. Furthermore, editors do not always have the services of independent expert statisticians to audit large datasets submitted to them.

Journal publications remain the central method of dispersing critical scientific data into the world of clinical medicine for incorporation into daily practice and beyond for the education of the general population. Considering the far-reaching consequences of scientific publications in a pandemic, authors, reviewers, and editors must remain cognizant of their moral and ethical responsibilities. It is hoped that like the *Lancet*, journals and editors continue to be open to accepting criticisms of published studies. Finally, medical curriculums in India including post graduate courses in Radiology must include rigorous training in clinical research methodology and research ethics. Students must be taught to uphold scientific truth and honesty in medical writing above the desire to publish “first.”

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Conflicts of interest

There are no conflicts of interest.

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